



# The Bridge



A quarterly newsletter from Michigan's Local Technical Assistance Program

Several county and municipal road agencies in Michigan have realized significant cost savings by **refurbishing** their heavy maintenance trucks and by equipping a new or existing truck chassis with a hook loader assembly, and then purchasing different task-specific attachments for the chassis. Refurbishing typically saves about 50% compared to a similarly-equipped new truck. Depending on the number and types of attachments, hook loaders can save even more.



## Refurbished and Multi-Use Trucks Reduce Fleet Costs

*John Ryyanen, Editor  
Center for Technology & Training*

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Replacing medium and heavy duty maintenance trucks can account for some of the highest capital expenses that local road agencies have to face in a given budget year. Depending on size, features, and attachments, new trucks can range in price from \$90,000 to over \$200,000 each. As vehicles age and deteriorate and funding continues to shrink, fleet managers are increasingly looking for ways to reduce this expense. Fortunately, two relatively new alternatives exist for agencies that need to update their trucks.

#### Postponing Replacement

In fleet management, conventional wisdom describes three major phases in the life cycle of a heavy vehicle: purchasing, operation, and retirement. The purchasing phase is simple—organizations acquire vehicles based on need and when they can afford to purchase them. The operation phase is more complex; it involves interconnected relationships between hours of use, mileage, type of use, preventive maintenance, and several other variables. The retirement phase is relatively simple, and it depends to a large extent on the usage variables encountered in the operation phase. A rule of thumb that governs the retirement phase of a vehicle's life for many organizations is that vehicles should be sold before maintenance costs reach 50% of replacement cost.

Refurbishing heavy trucks—particularly those used in winter maintenance, where heavy use and harsh operating conditions hasten deterioration—is typically not a common practice because the cost to do so can contradict the vehicle replacement rule of thumb. For example, a new tandem axle truck

suitable for plowing and deicing county roads costs about \$150,000. Refurbishing a similarly-equipped 10 to 12 year old plow truck can cost \$60,000 to \$80,000 or more. But several county and municipal road agencies in Michigan have postponed truck replacement by refurbishing existing trucks in their fleets rather than buying new ones.

#### Worth Refurbishing?

The current practice of refurbishing trucks started in Michigan in 2010 when a fleet manager from Calhoun County Department of Roads (CCDR) asked Randy Farmer, V.P. of sales and marketing at Valley Truck Parts, Inc. in Grand Rapids, to evaluate two of their plow trucks to determine if they were worth fixing. The vehicles in question were almost identical 1998 and 1999 dual axle Volvos with N14 Cummins diesel engines. Farmer remembers the trucks well.

“They were over 10 years old and each had about 120,000 miles on it,” he said. “The frame rails and cross members were cracked, the cabs were worn out, the drive trains and engines needed work. They obviously needed significant attention, but after looking them over and totaling up the parts, it was clear a refurb made sense. In the end, we gave them nearly new 1998 and 1999 model year trucks for about half of what they would have had to spend to replace them.”

#### Inherently Flexible

The process used to refurbish the CCDR trucks three years ago laid the groundwork for what has become a popular practice today. Refurbishment begins with

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## The Art of Thinking, Learning, and Leading

The book *Built to Last* outlines characteristics shared by companies that consistently perform well. In the book, authors Jim Collins and Jerry Porras describe what it means to be a visionary company:

*A visionary company is like a great work of art. Think of Michelangelo's scenes from Genesis on the ceiling of the Sistine Chapel or his statue of David. Think of a great and enduring novel like Huckleberry Finn or Crime and Punishment. Think of Beethoven's Ninth Symphony or Shakespeare's Henry V. Think of a beautifully designed building, like the masterpieces of Frank Lloyd Wright or Ludwig Mies van der Rohe. You can't point to any one single item that makes the whole thing work; it's the entire work—all the pieces working together to create an overall effect—that leads to enduring greatness.*

From what I have seen, the people who work at the most progressive and consistently high-performing state and local road agencies in Michigan all have three things in common: they think creatively, they learn continuously, and they lead without even thinking about it.

Every issue of *The Bridge* contains examples of people thinking, learning, and leading. A recent story that stands out to me as a great illustration of these traits is the one about Roscommon County Road Commission's (RCRC) asset management practices (see Vol. 24, No. 2). In that story, manager Tim O'Rourke explained his approach to developing an asset management plan for his agency. "You need to approach road maintenance as a business process, not a political process," he said. "Education helps remove the politics from roadway management decisions."

Leading up to that profound assertion, O'Rourke described one of his first meetings with the road commission board, after taking over as manager, "...the most insistent elected officials who served the loudest group of constituents ... got their roads fixed first," O'Rourke explained. In that meeting, RCRC commissioners identified over \$500,000 of road maintenance needs but they only had \$60,000 to spend. That year the road commission rebuilt a half mile of politically charged road while ignoring the basic maintenance needs on many miles of more important roads.

After realizing the need to make changes, O'Rourke put together a creative presentation to help his commissioners understand asset management. His commissioners willingly submitted themselves to learning about asset management, and today, RCRC is a leader in the area of asset management among local road agencies.

Two articles in this issue contain more great examples of people thinking, learning, and leading at progressive road agencies. The first describes Calhoun County Road Department's role in creating what has become a very popular and cost-effective truck refurbishment program in our state. In the same article, Mark Clancey, fleet manager at the City of Wixom, describes how he uses trucks equipped with hook-loaders to minimize equipment expenses.

The second article describes a practical research project completed in two parts by Michigan Department of Transportation's (MDOT) Operations Field Services Division. The project involved developing creative methods for measuring and analyzing how salt type, truck speed, and distribution method influence salt "bounce and scatter." Based on their findings, MDOT adjusted statewide best practices for applying deicer, and they reinforced Michigan's status as a national leader in winter operations.

Both articles describe many individual pieces fitting together to "...make the whole thing work." Like great art, the results are enjoyable to look at.

# The Bridge

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### About LTAP

The Local Technical Assistance Program (LTAP) is a nationwide effort funded by the Federal Highway Administration and individual state departments of transportation. The goal of the LTAP effort is to foster a safe, efficient, and environmentally sound surface transportation system by improving skills and increasing knowledge of the transportation workforce and decision makers.

### Steering Committee

The LTAP Steering Committee makes recommendations on, and evaluations of, the activities of Michigan's LTAP.

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The Center for Technology & Training is part of the Department of Civil & Environmental Engineering at Michigan Technological University in Houghton, Michigan. The mission of the CTT is to develop technology and software, coordinate training, and conduct research to support the agencies that manage public infrastructure. In support of this mission, the CTT houses Michigan's Local Technical Assistance Program, which is part of a national effort sponsored by the Federal Highway Administration to help local road agencies manage their roads and bridges. For more information, visit [www.MichiganLTAP.org](http://www.MichiganLTAP.org).



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# Updates From the MDOT Load Rating Unit

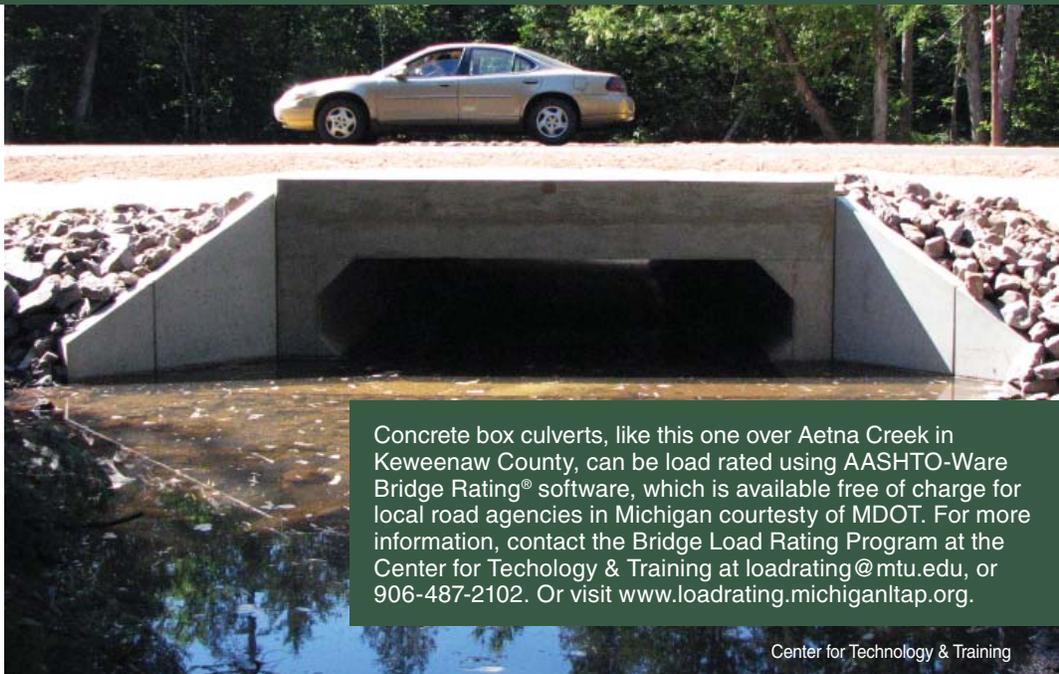
Christopher Gilbertson, Ph.D., P.E., Senior Research Engineer  
Center for Technology & Training

Creightyn McMunn, P.E. was recently selected as the manager of the Michigan Department of Transportation (MDOT) Load Rating Unit. Her group is responsible for overseeing the load rating of all bridges (Locally owned and MDOT owned) in the State. Creightyn started working for MDOT in the Structural Research Unit in 2004. In 2008, she joined the Bridge Management Unit as a load rating engineer and became the Load Rating Specialist in 2011 when the Load Rating Unit was formed.

During her career at MDOT, Creightyn has led technical investigations of highway structures and made recommendations based on structural analysis, field inspections and laboratory test results; prioritized load rating needs; performed load ratings; managed multiple consultant contracts; contributed to load rating policy development; and represented MDOT nationally as a member of the AASHTOWare Bridge Rating User Group. Prior to joining MDOT Creightyn worked for a consultant performing structural design and analysis.

Creightyn replaces Brad Wagner, P.E. who has accepted the position of Bridge Design Supervising Engineer for MDOT. You can reach Creightyn by email at [mcmunnc@michigan.gov](mailto:mcmunnc@michigan.gov) or by phone at (517) 335-1923.

The Center for Technology & Training (CTT) at Michigan Technological University is under contract with MDOT's Load Rating Unit to provide assistance to local



Concrete box culverts, like this one over Aetna Creek in Keweenaw County, can be load rated using AASHTO-Ware Bridge Rating® software, which is available free of charge for local road agencies in Michigan courtesy of MDOT. For more information, contact the Bridge Load Rating Program at the Center for Technology & Training at [loadrating@mtu.edu](mailto:loadrating@mtu.edu), or 906-487-2102. Or visit [www.loadrating.michiganltap.org](http://www.loadrating.michiganltap.org).

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agencies for meeting load rating requirements. The Bridge Load Rating Program at CTT is available to provide technical assistance to cities, villages and counties, and the consultants who serve them. Training courses for 2014 will include a new one-day format for general use of AASHTOWare Bridge Rating®, which is a software product used for conducting bridge load ratings. The CTT will also offer webinars on the following topics:

- The Basics – Getting from Plans to a Completed Rating (Winter 2014)

- General Load Rating Theory (Winter 2014)
- Load Rating a Concrete Box Culvert (Spring 2014)
- Overview of AASHTOWare Bridge Rating Output Reports (Spring 2014)

For technical assistance with load rating and for AASHTOWare Bridge Rating, contact the CTT by email at [loadrating@mtu.edu](mailto:loadrating@mtu.edu) or call 906-487-2102. AASHTOWare Bridge Rating is available free of charge for Michigan local agencies and consultants who serve them, through a state-wide licence purchased by MDOT. ■

## Element-Level Inspection Workshop at 2014 Michigan Bridge Conference



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*“The proper assessment of the condition of bridge elements is the cornerstone of sound bridge management. The introduction of element inspection condition methods in the early 1990s represented a significant advancement in the bridge inspection practice and has been adopted by the vast majority of State Transportation Departments in the United States. Bridge owners nationwide have recognized the benefits of detailed condition assessments through the use of the raw inspection information, expanded performance measures, and bridge management system deterioration forecasting and evaluation.”*

AASHTO Guide Manual for Bridge Element Inspection, First Edition

The current highway bill, *Moving Ahead for Progress in the 21st Century* (MAP-21), specifies that starting in October 2014, element level inspection is a requirement for all bridges on the national highway system. Bridge experts at the state and national level predict that the requirement will soon be extended to cover local bridges. To help bridge inspectors in Michigan prepare for this requirement, the Center for Technology & Training is coordinating a full-day work-

shop as part of the 2014 Michigan Bridge Conference. The workshop, **Introduction to Element Level Bridge Inspection**, will be conducted by engineers from the Federal Highway Administration. The workshop will satisfy requirements for recurrent training hours for registered bridge inspectors.

The Bridge Conference will be held March 18-19 at the Doubletree by Hilton in Bay City. Watch your email for more information.

# Study Shows How Truck Speed and Distribution Method Influence Salt Bounce and Scatter

Shaughn Kern, Technical Writer; and Alexander Slepak, Technical writing intern  
Center for Technology & Training



The Operations Field Services Division of the Michigan Department of Transportation recently completed a two-part study to measure the effectiveness of various salt application methods. Among other results, the study proved that salt bounce and scatter increased dramatically with speed.

Michigan Department of Transportation

Thousands of years ago, salt was prized for its ability to preserve food; it was also sown into the soil of enemy lands by invading armies to make the soil unsuitable for agriculture. Whether our ancestors understood the science of soil salinity is debatable, but they did have one thing in common with today's winter maintenance professionals: they knew the value of salt as a resource, and they appreciated the environmental damage salt could cause if misused.

According to a study conducted by the Michigan Department of Transportation (MDOT) in the early 1970s, 30 percent of dry salt used on roads is lost immediately

to bounce and scatter. The study concluded that pre-wetting the salt before spreading it reduced bounce and scatter by improving the application pattern and accelerating the melt-rate. Today pre-wetting has become commonplace and is recognized by state and local transportation agencies as a significant cost-saving measure. However, further research was necessary to determine the influence of other distribution variables on the effectiveness of salt.

## Building on Past Experience

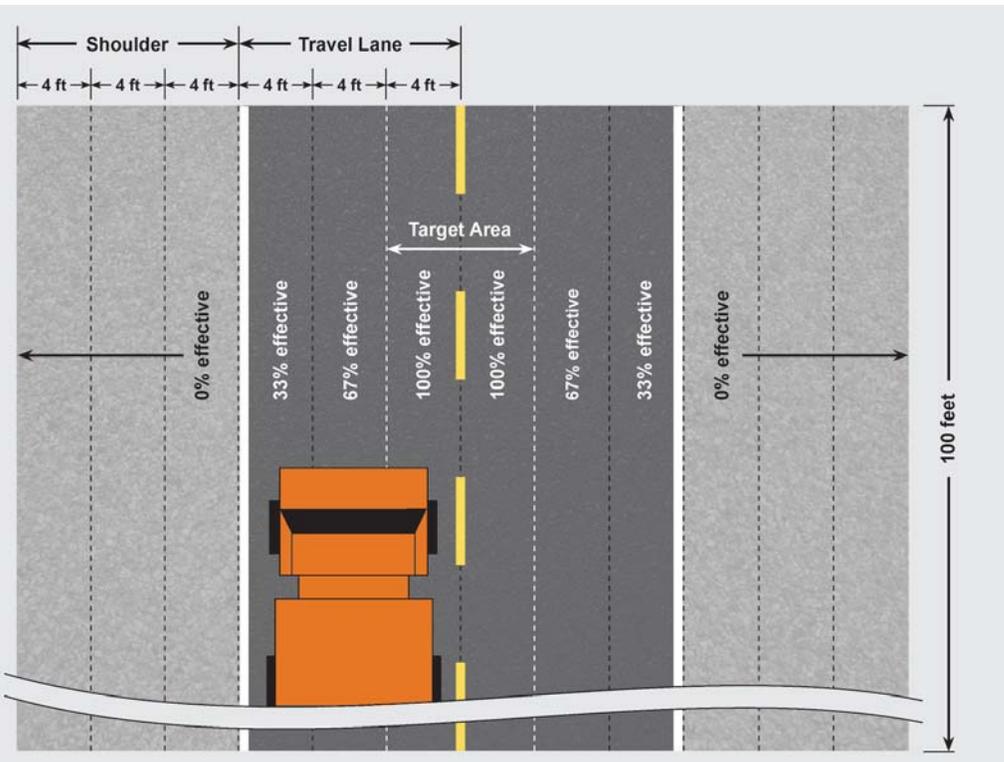
In the summer of 2012, the MDOT Operations Field Services Division built on the research from the 1970s, with the goal of

determining an optimum vehicle speed and distribution method for applying salt. MDOT's Operations Field Services Division provides training and support for maintenance garages that are responsible for summer and winter maintenance on state trunk lines in Michigan.

The new study reexamined the effectiveness of salt treated with a liquid chloride solution, and correlated it to truck speed and salt distribution systems. The comparison of two salt types (untreated and treated), three truck speeds (25, 35, and 45 mph) and two distribution systems (Y-chute and cross-conveyor) made for a total of twelve tests. To conduct the tests, MDOT staff laid out a grid on a 100-foot stretch of unused freeway in Southwest Michigan. This location made for an ideal test site where traffic would not disturb the salt or create a dangerous situation for the staff conducting the tests.

The test grid was made up of 12 four-foot lanes, which simulated a two-lane road with 12-foot paved shoulders (see diagram to the left). Trucks driving in the left travel lane dropped salt into the "target area," which spanned four feet on each side of the centerline. The amount of salt recovered from the target area and each four-foot grid lane was tabulated as a percentage of the total amount of salt that was dropped. Results were presented in a graphic form, as shown on page 5.

Special attention was paid to salt recovered in the target zone and the rest of the travel lane, since only salt in the travel lane is considered effective. Over the course of the entire study, salt recovered in the travel lane ranged from 95.3 percent to 35.7 percent, depending on the speed of the truck, the distribution



► next page

system used, and whether the salt was treated or untreated. As expected, the results of treated vs. untreated salt verified those found 40 years ago: treated salt performed significantly better at all speeds and through all distribution systems. The comparison between cross-conveyor and y-chute systems resulted in slightly better performance for the conveyor type. For untreated salt, nine percent more stayed in the travel lane when distributed through a conveyor; with treated salt, 13 percent more stayed in the travel lane.

### Speed Increases Bounce and Scatter

Regardless of salt type or delivery system, truck speed had the most profound effect on how much salt was lost to bounce and scatter. The most effective method of spreading salt on roads, a truck driving at 25 mph spreading treated salt with a conveyor, lost only nine percent to bounce and scatter. The same test at 35 mph resulted in 32 percent loss, with 45 mph showing a 45 percent loss. The table below shows the projected cost associated with the salt loss at each speed, based on the seasonal cost of salt in MDOT's Southwest region of Michigan.

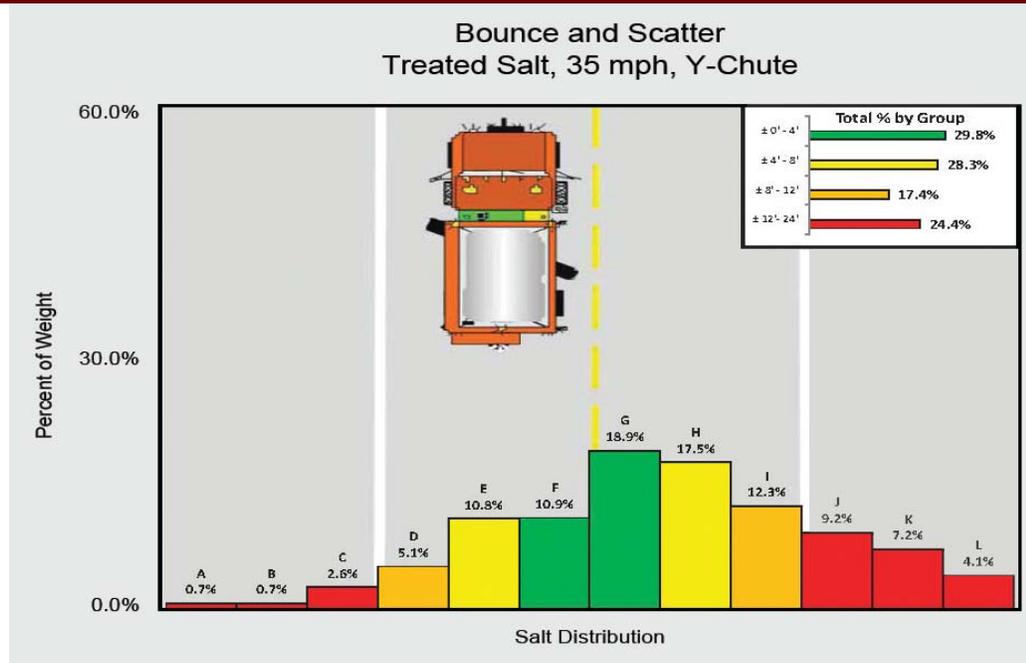
Speed	Percent Wasted	Projected Cost
25 mph	9 %	\$ 355,080
35 mph	32 %	\$1,247,400
45 mph	45 %	\$ 1,762,200

The main recommendation from this study, the complete results of which are available in a project summary report that MDOT published in November 2012, is crystal clear. According to the report, "The most effective scenario ... occurs when a treated salt product is applied with a cross conveyor from a truck traveling at 25 mph. Conversely, salt bounce and scatter is at its highest when applied from a Y-chute delivery system in a truck traveling at 45 mph." For a link to the report, see *More Information* at the end of this article.

### Less Salt is Better

Reduction of salt waste has benefits beyond cost savings. Salt causes deterioration of the road, corrosion of the vehicles travelling on it, and it can negatively affect roadside vegetation. Further, effective salt use can limit the need for abrasives such as cinders and sand, for which cleanup costs can be significant.

The report called for further testing using other delivery systems such as zero velocity spreaders (which eject salt in a way that compensates for truck speed), salt slurry



generators, and a variety of y-chute heights. This past summer, MDOT ran a second phase of testing to cover these additional variables.

### Phase 2: Dialing it in

In the second phase of testing, which was conducted during the summer of 2013 at the same site as the first phase, MDOT Roadway Operations Engineer Justin Droste established a simplified method of quantifying results. "Instead of reporting results in graphical form organized by grid lane, we combined all grid lane values into a single

sorry to update statewide deicing practices. The advisory specifies a maximum speed of 25 mph while applying deicing material. Justified exceptions to the practice include: peak hours on high-speed routes; using zero-velocity spreaders, slurry generators, or other technology that limits salt scatter; or other circumstances approved by the region engineer. The advisory also recommends 7 to 10 gallons of liquid per ton of dry salt. It is available for download from MDOT's web site (see *More Information*, below).

## Regardless of salt type or delivery system, truck speed had the most profound effect on how much salt was lost to bounce and scatter.

point value for each test," Droste explained. "The single point value provided a simple overall assessment, which enabled us to compare test results more easily."

Results indicated that the most effective methodology was to spread salt from a zero-velocity system at 25 mph, with an effectiveness score of 0.93 on a scale of 0.00 to 1.00. Even at 35 mph, the zero-velocity system had an effectiveness score of 0.82, which was better than all other systems running at 25 mph. Notably, when accelerated to 45 mph, the effectiveness of the zero-velocity system dropped to two-thirds of the score at 25 mph.

### In Conclusion

Based on results from the two phases of the study, MDOT released a Maintenance Advi-

Tim Croze, region support engineer of the MDOT Operations Field Services Division, is pleased with what his team learned from the study. "It's nice to assign actual effectiveness numbers to the many different options we have for spreading salt," he said. "The right combination of salt type, distribution system, and truck speed will enable us to minimize salt waste by keeping more of it in the travel lane." ■

### More Information

Bounce and Scatter Summary Report  
[www.MichiganLTAP.org/DeicingStudy](http://www.MichiganLTAP.org/DeicingStudy)

MDOT Maintenance Advisory  
[www.MichiganLTAP.org/MA2013-01](http://www.MichiganLTAP.org/MA2013-01)

# Reduce Fleet Costs (from Page 1)

a careful evaluation of the truck to develop a detailed inventory of all parts and components. From there, the refurbisher develops a plan for the vehicle. “Nearly every plan we put together has some inherent flexibility so the customer can make adjustments to what they want to have done,” Farmer explained. “However, if the frame rails, cross members, and other structural components are in bad shape, they’re non-negotiable because failure at that level would be catastrophic. Beyond that, we inspect the cab, hood, and fenders, and we test the drivetrain and engine to determine if we need to rebuild or replace, or if we can reuse components.

Many component updates that were not available at the time the truck was originally purchased can be added as part of the refurbishment process. “We’ve updated hydraulic systems and hydraulic controls, added special component housings to protect from corrosion, and we’ve lengthened frames to accommodate plows and other attachments,” Farmer explained.

## Spending Less Makes Sense

Kevin Eichler, equipment foreman at Branch County Road Commission (CRC) sent two trucks to be refurbished in the past year. The first one, a 1998 tandem axle International with 180,000 miles, only needed work done on the cab, hood, and dump box; the frame rails, drive train, and engine were all in decent shape. “It was basically just a refresh, rather than a full refurb,” Eichler explained. He plans to use the truck as a spare, not on a regular route. “For \$22,000 we’re expecting

to get five to seven more years of part-time service out of it,” he said. The refurb process took four weeks, from the time the truck left the Branch CRC facility to the day it was returned to service.

The second Branch CRC truck, the refurbishment of which is still underway, is a 2002 tandem axle Volvo with 177,000 miles. An initial inspection of the truck revealed the need for extensive work, including frame rails, front axle, drive shafts and differentials, transmission, brake system, rims, and cab repair. The truck also has an underbody scraper and a live-bottom dump box, both of which will also be refurbished. “Fortunately, a dyno test on the engine showed that it’s in good shape,” Eichler explained. “Other than that, the truck needs all the major wear components.”

The total cost to refurbish is expected to be \$83,000, and it is scheduled to take six to eight weeks to complete. To replace the truck, Eichler estimates he would have had to spend \$190,000. The resale value of the truck before refurbishing would have been \$12,000. “It wasn’t necessarily ready for scrap—especially with a solid engine—but it definitely wasn’t suitable as a full-time route truck,” Eichler said. “No matter how you look at it, the refurb made sense. We’ll get a fully-functional truck, which we expect to use for seven years or more, for less than half of what we’d pay for a new one.”

## Familiarity Breeds Convenience

Beyond the cost advantages, refurbished trucks are also more convenient for agency

mechanics to maintain than entirely new trucks. “New trucks with all the latest emissions equipment are especially challenging,” Eichler said. “An unexpected benefit of refurbishing is that our mechanics have been working on these trucks for many years so there’s no learning curve.”

Eichler and his mechanics also learned more about their trucks through the process of having them refurbished. “The refurb team didn’t just take our trucks and work on them behind closed doors; they actually kept us involved every step of the way,” Eichler explained. “We’re more familiar with our trucks than ever.”

## Considerations and Show-Stoppers

In spite of the benefits and advantages, there are also drawbacks to refurbishing, and there is a point in the life of a vehicle where refurbishing simply no longer makes sense. On a refurbished truck, some upgrades are possible, but the only way to get the full benefits of the latest in safety and efficiency technologies is to purchase a new truck. Also, new trucks include more thorough diagnostics capabilities, and have a factory warranty on most major components.

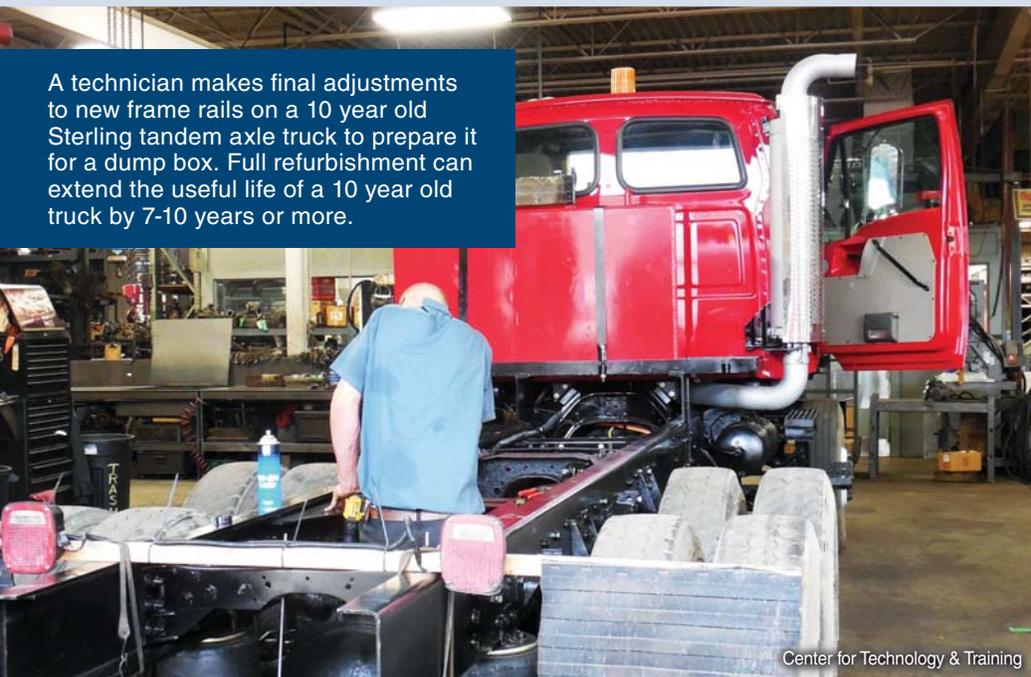
Valley Truck’s Farmer has seen a few instances where refurbishing was not feasible. “If a truck is over 20 years old, and the engine, drive train, and frame—which is often cracked at that point—are all original, refurbishing probably isn’t going to make sense,” he explained. “After 20 years, just about every system is going to need a lot of work, parts are harder to come by ... you’re basically rebuilding the entire vehicle. The decision is typically not very difficult because you can easily see refurbishing is not worth it.”

## One Chassis, Many Jobs

Another option when replacing trucks is to equip a new or existing truck chassis with a hook loader assembly, and then purchase different task-specific attachments for the chassis. Mark Clancey, fleet manager for the City of Wixom, has two trucks equipped with hook-loaders in his fleet. The first was based on a 2009 Ford F550 chassis. Attachments—each of which is mounted on a skid that enables them to be swapped easily with the hook loader mechanism—include a three-yard salt box with pre-wetting tanks, a stainless steel dump box, a flatbed, and four 10-yard dumpster boxes.

In 2011, Clancey had one of his larger existing trucks outfitted with a second hook loader to accommodate more winter mainte-

A technician makes final adjustments to new frame rails on a 10 year old Sterling tandem axle truck to prepare it for a dump box. Full refurbishment can extend the useful life of a 10 year old truck by 7-10 years or more.



Center for Technology & Training

nance work. “We had a 2001 Sterling L-Line with low miles, and it bothered me that we didn’t use it more,” he said. The truck was equipped with a dump box, and Clancey later added a five-yard, slide-in salt spreader with pre-wet tanks, but after 10 years of use the truck had less than 30,000 miles on it. With the new hook loader assembly, Clancey added a 1,000 gallon brine tank for anti-icing. He was also able to retrofit the existing slide-in salt spreader as a separate attachment, and he purchased an additional 13-yard dumpster box. The total cost for the retrofit and attachments was just under \$80,000.

### Helping Trucks Work Harder

Clancey has been very pleased with the cost and convenience of his hook loader trucks. “With our first hook loader, on the F550, we were able to address three seasonal needs and handle a group of dumpsters with a single chassis,” he said. “The total cost for the truck and all attachments was about \$60,000. We would have had to spend more than twice that to get a single-use truck for each task.”

Clancey spent \$80,000 to retrofit the larger Sterling and equip it with three attachments. A comparable single-use truck would have cost about \$125,000. Costs of hook loader attachments vary widely depending on the type of attachment. A basic flatbed attachment costs approximately \$2,500. The 1,000-gallon brine tank with spray bar that Clancey purchased for his Sterling hook loader cost \$20,000.

“With the Sterling, we could have purchased a brine tank on a trailer instead, but that would have introduced more axles and tires to maintain. Mounted on a hook loader skid, the tank is virtually maintenance free,” Clancey said. “And we still have the option of adding more attachments later without the capital expense and ongoing maintenance associated with an entire truck.”

### Avoiding Fleet Creep

According to Mark Lester, product support specialist at Truck & Trailer Specialties, purchasing single-use trucks can lead to a phenomenon he describes as “fleet creep,” which is the tendency for fleets of equip-

ment to gradually increase in size over time. “The essence of effective fleet management involves identifying pieces of equipment by the operation each performs, and then determining if the operation is proactive or reactive,” Lester said. He explained that plowing snow is a common reactive operation, and spraying a road or bridge with anti-icing chemicals before a storm is a proactive operation. “In general, agencies should plan their fleets around reactive operational needs, but doing so can easily lead to fleet creep. Hook loaders are the best way to minimize fleet size and still accommodate both reactive and proactive operations,” he said. ■



Mark Clancey, fleet manager at the City of Wixom, had a 2001 Sterling L-Line truck retrofitted with a hook loader to accommodate more winter maintenance work. “After 10 years, the truck had less than 30,000 miles on it,” Clancey explained. “It bothered me that we didn’t use it more.”

City of Wixom



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## Benefits Beyond Cost Savings

From a cost perspective, the benefits of trucks equipped with hook loaders are obvious. But Mark Clancey, fleet manager at the City of Wixom, has realized benefits far beyond cost savings. “I’ve been impressed with the flexibility that the hook loaders have introduced into our day-to-day operations,” Clancey said. “Being able to load and unload attachments in 10 minutes or less has enabled us to do things that we simply would not be able to do with regular trucks.”

For example, several years ago, the City of Wixom began to offer an “adopt a truck” service to residents who needed to get rid of compostable yard waste. The service involved parking one of Wixom’s dump trucks in a resident’s driveway for a period of time for a \$25 fee. It was a popular program, but it made Clancey a little bit uncomfortable to let a truck worth \$60,000 or more sit idle for sometimes days at a time. “It was great for our residents, but from a fleet management perspective, it wasn’t very efficient,” Clancey said. “Not to mention the potential for vandalism or accidental damage.”

With the city’s first hook loader, Clancey ordered four 10-yard dumpster boxes, which has enabled the city to continue offering the service (now called “Adopt a Box”) without tying up a truck.

The dumpster boxes are also great for community cleanup activities in city parks and recreation areas. “If we know of work going on, we can load one of the dumpsters with wheelbarrows, rakes, and other equipment, drop it off in a convenient location, and then pick it up later with the equipment and any cleanup waste,” Clancey said.

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## Michigan's Local Technical Assistance Program

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## Upcoming Events

(details at [www.MichiganLTAP.org](http://www.MichiganLTAP.org))



In Person



Webinar



### Accelerated Bridge Construction

*Dec. 9 – Lansing*



### Asset Management Workshop

*Dec. 10 – Okemos, Dec. 11 – Jackson*



### Materials Acceptance Process Seminar

*Dec. 11 – Escanaba*



### Michigan P.E. Continuing Education Webinar

*Dec. 17, Jan. 8*



### Highway Safety in Roadsoft Webinar

*Dec. 18*



### Bridge Load Rating Webinar

*Jan. 13*



### Michigan County Engineers' Workshop

*Feb. 11-13 – Manistee*



### Asset Management for Local Agency Bridges

*Feb. 20 – Grand Rapids*

## A workshop dedicated entirely to engineering issues on local roads

It's no mystery why county and municipal engineers have such difficult but exciting jobs. In addition to the wide variety of technical issues associated with building and maintaining roads, the men and women responsible for our transportation infrastructure have to navigate a myriad of different (and often changing) legal, social, environmental and political issues as well.

The **Michigan County Engineers' Workshop**, which is open to all county road commissions, municipal departments of public works, and consultants, is designed to help. Currently in its 48th consecutive year, the workshop is planned and coordinated by a committee of member engineers from the County Road Association of Michigan (CRAM). Sponsored jointly by CRAM and Michigan's Local Technical Assistance Program (LTAP), the event provides real-world guidance for county and municipal engineers at all levels of experience. Presenters at the workshop, the majority of whom are practicing engineers themselves, share new technologies, innovative projects, and other best practices from the job site, the office, the court room, and the board room.

Mathew Hannahs, P.E., assistant county engineer at Eaton County Road Commission, is chair of the event planning committee this year. Hannahs hasn't missed a County Engineers' Workshop since attending his first in 2007. "I'm pleased to serve as the chair of the planning committee this year, and I'm excited to hear from the speakers we have lined up," Hannahs said. "CEW is the only event that I know of that is dedicated entirely to engineering issues on local roads. Every year I've attended, I returned to my office with great ideas, new information, and a list of new contacts to help me do my job more effectively. It's always a great workshop—very inspiring."

The two and a half day event will be held February 11–13, 2014 at the Little River Resort in Manistee. For a detailed event agenda and other information, see [www.MichiganLTAP.org/2014\\_CEW](http://www.MichiganLTAP.org/2014_CEW).

